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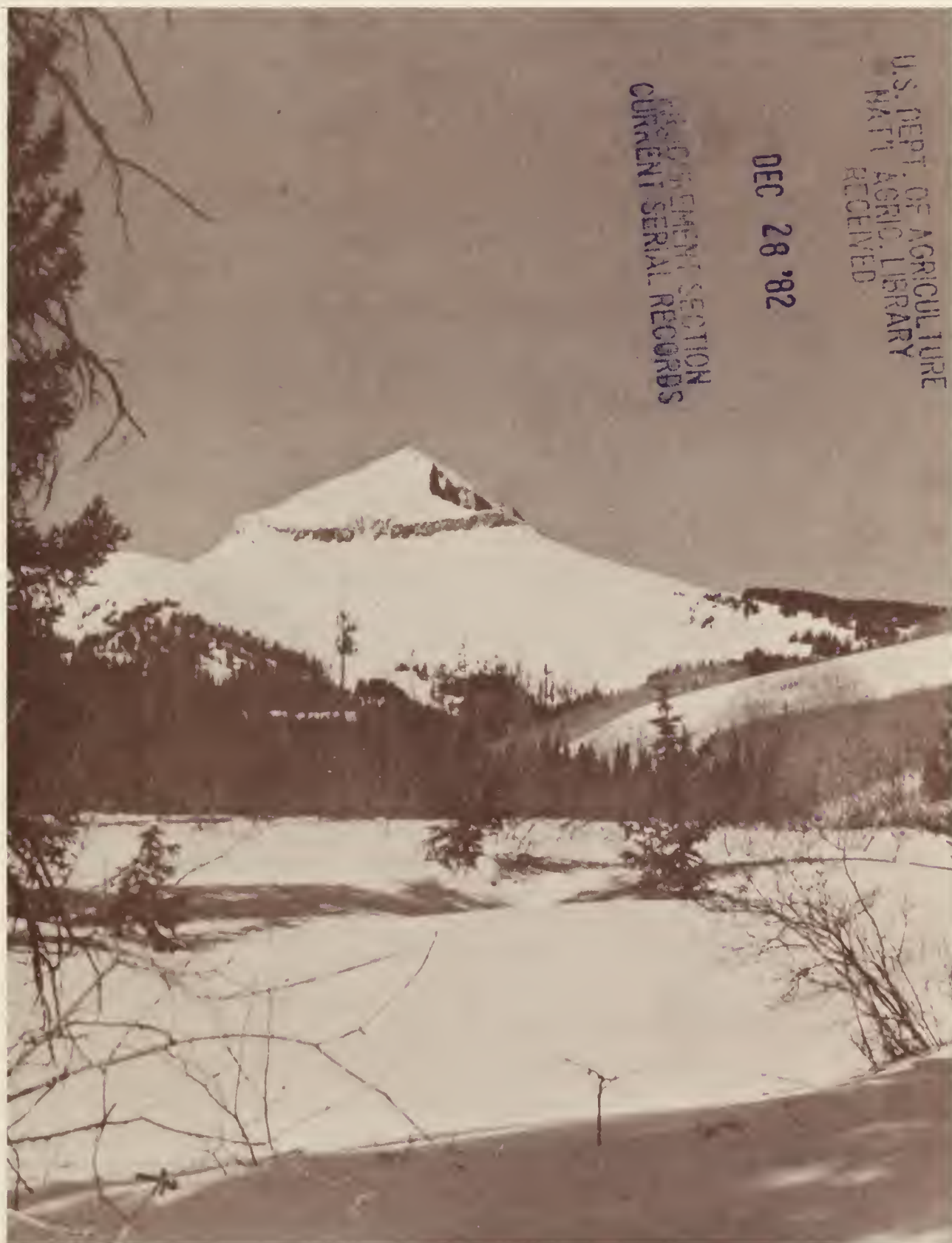
Soil  
Conservation  
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Portland,  
Oregon



# Water Supply Outlook for Oregon

## as of OCTOBER 1, 1982



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## TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

### COVER PHOTO: LONE CONE, NEAR NORWOOD COLORADO, BLANKETED BY ITS WINTER MANTLE OF SNOW.

#### PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 510, 511 N.W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	Room 129, 2221 East Northern Lights Blvd., Anchorage, Alaska 99504
Arizona	Room 3008, Federal Building, 230 N. First Ave., Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno, Nevada 89505
Oregon	1220 S. W. Third Ave., Portland, Oregon 97204
Utah	4420 Federal Bldg., 125 South State St., Salt Lake City, Utah 84138
Washington	360 U. S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82602

#### PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Snow Surveys Branch, California Department of Water Resources, P.O. Box 388, Sacramento, California 95802 --- for British Columbia by the Ministry of the Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia V8V 1X5 --- for Yukon Territory by the Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory Y1A 3V1 --- and for Alberta, Saskatchewan, and N.W.T. by the Water Survey of Canada, Inland Waters Branch, 110-12 Avenue S.W., Calgary, Alberta T3C 1A6.



# **WATER SUPPLY OUTLOOK FOR OREGON**

and  
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

*Issued*

October 1, 1982

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# WATER SUPPLY OUTLOOK AND SUMMARY

## FOR OREGON

OCTOBER 1, 1982

Oregon experienced a uniformly excellent water supply during the spring and summer of 1982. There were a few minor shortages on smaller streams in Grant, Josephine, Clackamas and Crook counties. However, this is a usual occurrence on these streams. All areas with access to stored water supplies had excellent amounts available for irrigation. Many reservoirs are carrying over good supplies for next year.

Cold temperatures early in the season retarded the growth of range grasses and summer rains hurt the quality of hay, but overall forage production around the state was above average.

This was the best overall water year Oregon has experienced since the early 1970's.

### RESERVOIR STORAGE

Most irrigation reservoirs have good carryover storage. This will help insure next year's supply of irrigation water. Twenty-six reservoirs are storing 1,990,000 acre feet. This is 62% of capacity and 132% of average for October 1. Last year these reservoirs were only 29% of capacity. September rains have helped the storage picture considerably.

### PRECIPITATION

The summer precipitation was much above normal for most areas east of the Cascades. The amounts ranged from 120% of normal in the Lower John Day basin to 205% in the Deschutes and Crooked River basins. The west side of the Cascades had above average precipitation. Values ranged from 109% in the Hood River watershed to 124% in the Willamette Valley.

Southern Oregon from Klamath County eastward experienced much above average precipitation for the water year. The values ranged from 126% to 162% of average. The remaining portions of Oregon had normal to above normal amounts of precipitation. The area experiencing the least amount of precipitation for the water year (102% of average) was the Lower John Day basin.

### SOIL MOISTURE

Soil moisture is above average throughout the State because of the good fall precipitation.

### STREAMFLOW

As forecast early in the year, streamflow was generally above to much above normal throughout the State. Flows held up well throughout the summer months as the State experienced timely rains.



Summary continued -

Representative streamflows as a percent of average for this past snowmelt runoff season versus the April 1 forecasts are as follows:

	<u>Period</u>	<u>Observed Flow</u>	<u>April 1 Forecast</u>
Owyhee net Inflow	April-July	146%	207%
Grande Ronde nr. LaGrande	April-July	162%	130%
Middle Fk. of Willamette nr. Oakridge	April-July	115%	108%
Rogue at Raygold	April-July	110%	121%
Upper Klamath Lake net Inflow	April-July	144%	140%

Following is a summary of water supply conditions as reported by counties:

#### NORTHWEST OREGON COUNTIES

Linn-Lane - There were no shortages as the irrigator experienced a full and adequate supply. Forage and row crop production was excellent. There was less irrigation than last year due to high power costs. Approximately 10,000 to 12,000 acres were irrigated in Lane County.

Clatsop - Even though streams were extremely low early in the season, irrigation water supplies were adequate.

#### CENTRAL OREGON COUNTIES

Deschutes - Adequate to above average supplies of water were available. Reservoir storage in Crescent Lake has been improved considerably. It increased from 10,700 acre feet at this time last year to 48,000 acre feet on October 1. 67,750 acres were irrigated effectively.

Crook - A full supply of water was delivered to Ochoco Irrigation District users. 7000 acres on the Lower Crooked River had sufficient water while 12,000 acres on the Upper Crooked had a full supply until mid-July with shortages after that date. This was a good year for grass production.

Wheeler - This was a good water year. Streamflows were well above average with all irrigated acres experiencing a sufficient supply of water. The hay crop was 110% of normal in yield.

Grant - Water supplies were well above those normally experienced. Minor shortages occurred on some of the tributaries to the John Day, but supplies on the main stem were adequate.



Summary continued -

Lake - More than adequate water supplies were available for Lake county. 77,000 acres were effectively irrigated. Average to above average hay production was achieved by most growers. Carryover water in the irrigation reservoirs is 175% of normal.

Polk - Supplies were adequate except for 1 stream which experienced a cutoff for 3 days. A change in cropping use and wet weather made more water available. Forage and other crop production was excellent with 12 to 14 ton corn yields being harvested.

Columbia - There was sufficient water for all users. A 100% supply was available to all drainage districts. Approximately 10,000 acres were irrigated.

Washington - 14,000 acres were effectively irrigated in the Tualatin Valley Irrigation District. This has increased considerably from 3900 acres in 1978. Water supplies were also sufficient outside the District boundaries.

Benton - There were no water problems anywhere in the county. Crops were good and 23,450 acres were adequately irrigated.

Marion - Sufficient irrigation water was available. Irrigation Districts had no difficulties getting water delivered. Forage supplies were good.

Clackamas - Good water supplies were available to most users. Users on lower elevation streams in the southern part of the county were cut back slightly late in the season. Crop yields were up due to the warm dry spell the first part of June which helped deter some of the diseases such as root rot in grain.

Multnomah - Sufficient water supplies were available for 5200 acres.

#### SOUTHWEST OREGON COUNTIES

Josephine - Water supplies were about 85% of normal with 35,000 acres effectively irrigated. 7,000 acres were affected somewhat by insufficient water supply. Forage production was good.

Jackson - 46,513 acres were effectively irrigated with normal to below normal supplies of water in all the organized irrigation districts. Outside the irrigation districts 5000 acres had sufficient water. About 3500 acres on Evans Creek and the Bear Creek tributaries had about a 70% of normal supply.

Coos - Water supplies were normal.

Klamath - Irrigation supplies have been more than 100% of irrigation requirements. Clear Lake, Gerber and Upper Klamath Lake all have excellent carryover storage.

Jefferson - The water supply this summer was more than adequate. 58,800 acres were effectively irrigated. Forage production was a little above normal although grasses got a late start because of earlier cold weather.

Summary continued -

Wasco - It was an excellent water year. There were no shortages with 35,000 acres adequately irrigated.

Gilliam - Streamflow was normal.

Morrow - West Extension Irrigation District had a near average water supply while the streams in Morrow county had above average supplies.

#### EASTERN OREGON COUNTIES

Harney - 1982 was an excellent irrigation year. Most users had ample water. Streams flowed at a high level for four weeks longer than usual. Malheur and Harney Lakes are at historical high levels. Farm land which was flooded around the lakes this year could very well have the same problem next year.

Malheur - 1982 was a higher than normal water year. All reservoirs filled and spilled excess water. All users with access to stored water had adequate irrigation supplies. Users dependent on direct diversion had water longer into the season than normal.

Baker - The irrigated lands in the county received adequate water from both reservoir storage and direct diversion sources this year. Range forage supplies were near normal in most of the county.

Wallowa - 1982 was an excellent irrigation water supply year. All areas had more than adequate supplies available. Carryover storage in Wallowa Lake is better than average. Soil moisture on the mountain watersheds is above normal.

Union - Above average water supplies were available this past summer and fall. July rains helped the spring grain crops but were a problem at harvest time.

Umatilla - Irrigation water supplies ranged from 100% to 110 % of normal. No irrigated lands suffered from a shortage because of a lack of surface runoff.

This report contains data furnished by the Oregon Department of Water Resources, U.S. Geological Survey, NOAA National Weather Service and other cooperators.

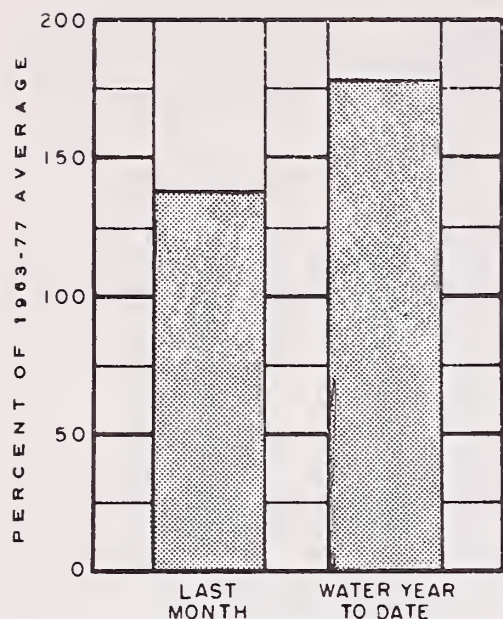
# STATUS OF RESERVOIR STORAGE, OCTOBER 1, 1982

RESERVOIR	USABLE CAPACITY (Thous. A.F.)	THOUSANDS ACRE FEET IN STORAGE ABOUT OCT. 1		
		1982	1981	15-Year Average 1963-77
<u>UPPER COLUMBIA DRAINAGE</u>				
Owyhee	715.0	491.2	275.2	378.9
Beulah Reservoir	60.0	19.8	16.7	9.0
Bully Creek	30.0	18.4	9.2	6.7
Warm Springs	191.0	137.8	71.5	61.3
Phillips Lake	73.5	50.5	38.4	36.5
Unity	25.2	11.7	5.2	3.0
Thief Valley	17.4	15.9	4.0	4.6
Wallowa Lake	37.5	28.0	11.9	15.2
Wolf Creek	10.4	4.9	1.7	--
<u>LOWER COLUMBIA DRAINAGE</u>				
Cold Springs	50.0	5.2	4.4	3.2
McKay	73.8	22.2	17.4	9.8
Ochoco	47.5	28.9	24.8	16.7
Prineville	153.0	113.2	100.0	95.3
Crane Prairie	55.3	33.3	11.2	21.3
Crescent Lake	86.9	48.0	10.7	45.1
Wickiup	200.0	102.8	22.7	61.3
Clear Lake (Wasco)(8/12)	11.9	4.2	N/R	2.6
Blue River	85.6	24.9	14.5	17.4
Cottage Grove	30.0	11.1	13.1	6.7
Cougar	155.2	64.7	67.3	84.1
Detroit	299.9	175.7	146.4	179.4
Dorena	70.5	30.7	34.1	18.7
Fall Creek	115.0	70.5	67.1	31.2
Fern Ridge	94.2	79.1	77.1	62.4
Foster	30.0	25.1	25.9	23.2
Green Peter	270.0	153.7	155.5	116.0
Hills Creek	200.0	94.2	55.2	102.5
Lookout Point	337.2	199.6	178.0	202.4
Timothy Lake	61.7	61.2	59.0	61.0
Henry Hagg Lake	53.0	32.4	29.3	--
<u>WEST COAST DRAINAGE</u>				
Applegate	75.2	45.9	12.9	--
Fourmile Lake	16.1	6.3	0	6.8
Fish Lake	8.0	5.4	0.8	3.8
Howard Prairie	60.0	47.4	29.9	43.3
Hyatt Prairie	16.1	5.0	7.7	9.8
Emigrant Lake	39.0	10.1	1.3	7.7
Lost Creek	315.0	196.6	119.6	--
Upper Klamath	584.0	363.1	97.3	332.4
Gerber	94.0	60.6	7.0	38.0
Clear Lake	440.2	265.4	95.9	206.0
Cottonwood	8.7	2.5	0.5	0.6
Drews	63.0	35.9	7.1	29.4
Thompson Valley	19.5	10.3	0.4	--

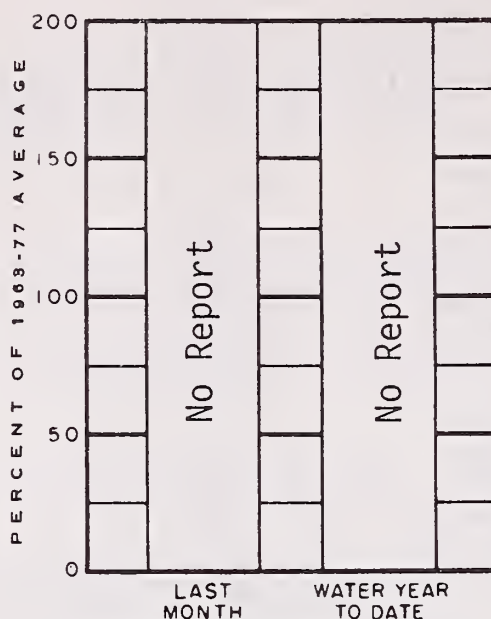


# CURRENT OREGON STREAMFLOW

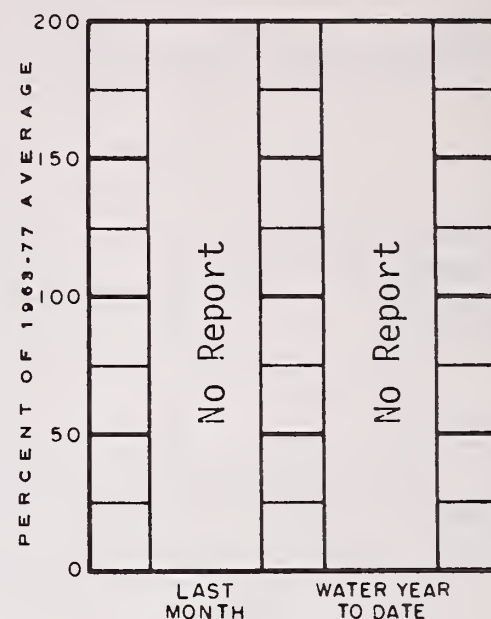
OCTOBER 1, 1982



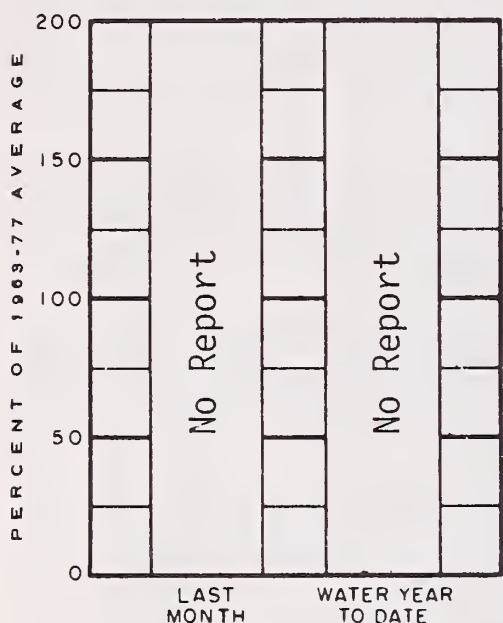
Owyhee Lake net inflow



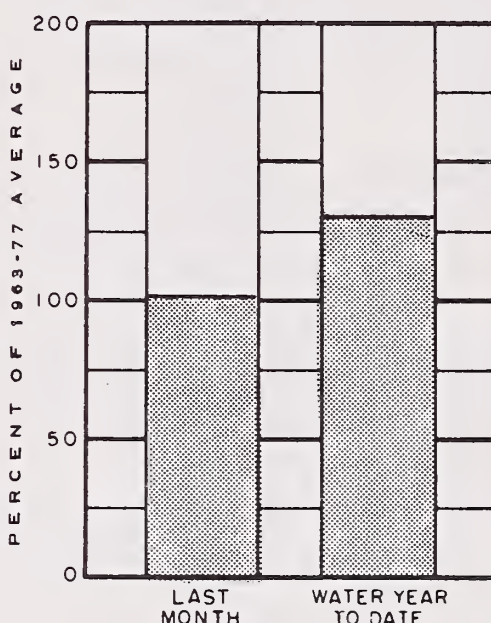
Grande Ronde at La Grande



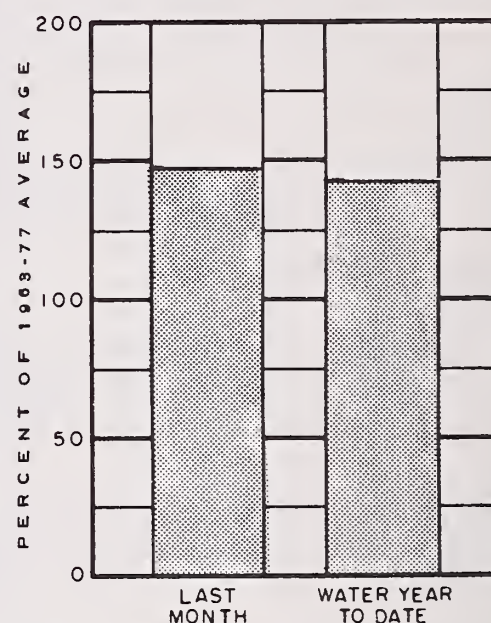
Chewaucan nr. Paisley



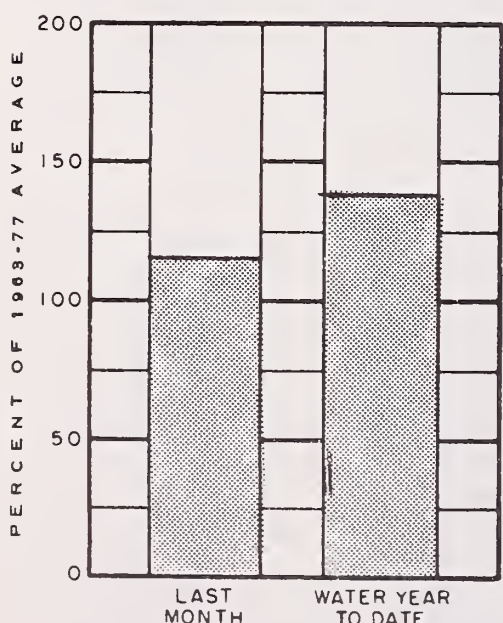
John Day at Service Creek



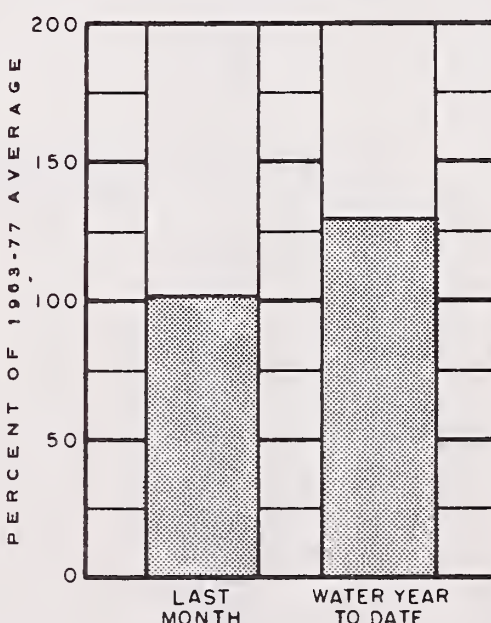
Deschutes at Moody



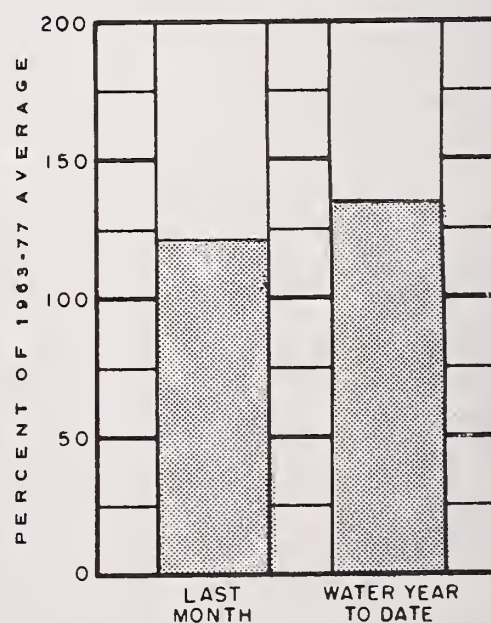
Mid. Fk. Willamette below No. Fk.



Umpqua near Elkton



Rogue at Raygold



Upper Klamath Lake net inflow

Data furnished by U.S. Geological Survey; The Pacific Power and Light Co.;  
and North and South Boards of Control Owyhee Project.

# The Following Organizations Cooperate in the Oregon Snow Survey Work

## STATE

*Idaho Cooperative Snow Surveys*  
*Nevada Cooperative Snow Surveys*  
*Oregon State University*  
*Oregon Department of Water Resources*  
*Soil and Water Conservation Districts of Oregon*

## COUNTY

*Douglas County Water Resources Survey*

## FEDERAL

*Department of Agriculture*  
*Cooperative Extension Service*  
*Forest Service*  
*Soil Conservation Service*  
*Department of Army*  
*Corps of Engineers*  
*Department of Commerce*  
*NOAA, National Weather Service*  
*Department of Energy*  
*Bonneville Power Administration*  
*Department of the Interior*  
*Bureau of Land Management*  
*Fish and Wildlife Service*  
*Geological Survey*  
*Bureau of Reclamation*

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*Pacific Power and Light Company*  
*Portland General Electric Company*  
*California-Pacific National*

## MUNICIPALITIES

*City of Baker*  
*City of La Grande*  
*City of Portland*  
*City of The Dalles*  
*City of Walla Walla*

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*Arnold Irrigation District*  
*Associated Ditch Companies*  
*Burnt River Irrigation District*  
*Central Oregon Irrigation District*  
*East Fork Irrigation District*  
*Grants Pass Irrigation District*  
*Hood River Irrigation District*  
*Jordan Valley Irrigation District*  
*Juniper Flat Irrigation District*  
*Lakeview Water Users, Incorporated*  
*Medford Irrigation District*  
*Middle Fork Irrigation District*  
*North Board of Control - Owyhee Project*  
*Ochoco Irrigation District*  
*Rogue River Valley Irrigation District*  
*South Board of Control - Owyhee Project*  
*Squaw Creek Irrigation District*  
*Talent Irrigation District*  
*Tumalo Project*  
*Vale - Oregon Irrigation District*  
*Warm Springs Irrigation District*

## PRIVATE ORGANIZATIONS

*The Crag Rats, Hood River, Oregon*



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